

PATENT APPLICATION

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q52856

Giuseppe GUARINO, et al.

Appln. No.: 09/231,791

Group Art Unit: 1764

Confirmation No.: 2603

Examiner: Alexa Doroshenk

Filed: January 15, 1999

For: METHOD FOR IN-SITU MODERNIZATION OF A HETEROGENEOUS SYNTHESIS
REACTOR

REPLY BRIEF PURSUANT TO 37 C.F.R. § 41.41

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.41, Appellant respectfully submits
this Reply Brief in response to the Examiner's Answer dated April 4, 2007. Entry of this Reply
Brief is respectfully requested.

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STATUS OF CLAIMS

Claims 1-10 are pending in the Application, stand rejected and are all the claims that are the subject of the present appeal. Specifically, all the claims stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Poussin (US 5,202,097) as presented in the decision by the Board of Patent Appeals and interferences filed February 10, 2004. The Examiner's rejection of the claims under 35 U.S.C. § 112, first paragraph, has been withdrawn.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-10 are unpatentable under § 103(a) over Poussin (US 5, 202,097) as presented in the decision by the Board of Patent Appeals and Interferences filed February 10, 2004.

For purposes of this appeal, claims 1 and 6 stand together and claims 3 and 8 stand together. Again, the Examiner's rejection of the claims under 35 U.S.C. § 112, first paragraph has been withdrawn and, thus, is not further addressed.

ARGUMENT

Most of the arguments set forth in the Examiner's Answer mailed April 4, 2007 are issues already dealt with fully in the Appellants' Brief on Appeal, but request the following additional remarks be considered.

A. Poussin fails to teach or suggest all of the features of independent claims 1 and 6 because the metal cap (10) does not extend from an upper end of the cylindrical central stack (9) along a perforated portion of the cylindrical central stack (9).

In particular, Poussin (US 5,202,097) discloses a cylindrical central stack 9, "which is generally a perforated tube covered by a grid (30) (FIG. 2) and which is evacuated by the outlet (5)." The Examiner relies on this portion of Poussin alleging, "[A] person of ordinary skill in the art would have reasonably expected that the cap (10) would cover perforations in the gas tube (9)." (*Examiner's Answer*, p. 4). With all due respect, Applicants disagree with this conclusion for the following reasons and submit that Poussin fails to disclose "an unperforated cylindrical wall . . . extending from an upper end of said gas outlet wall ***along a perforated portion of said gas outlet wall***," as recited in claim 1.

First, when evaluating the disclosure of the prior art, the "prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." (MPEP § 2141.02 (VI.) *citing W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)).

Furthermore, the "hypothetical 'person having ordinary skill in the art' to which the claimed subject matter pertains would, of necessity have the capability of understanding the scientific and

engineering principles applicable to the pertinent art.” (*Ex parte Hiyamizu*, 10 USPQ2d 1393, 1394 (Bd. Pat. App. & Inter. 1988)).

Here, Applicants submit that the phrase “which is generally a perforated tube,” is at best a vague teaching, which itself is irresolvable without further analysis. First, the term generally has several different meanings, one of which is: “in disregard of specific instances and with regard to an overall picture.”¹ Consequently, the whole of the reference must be reviewed from

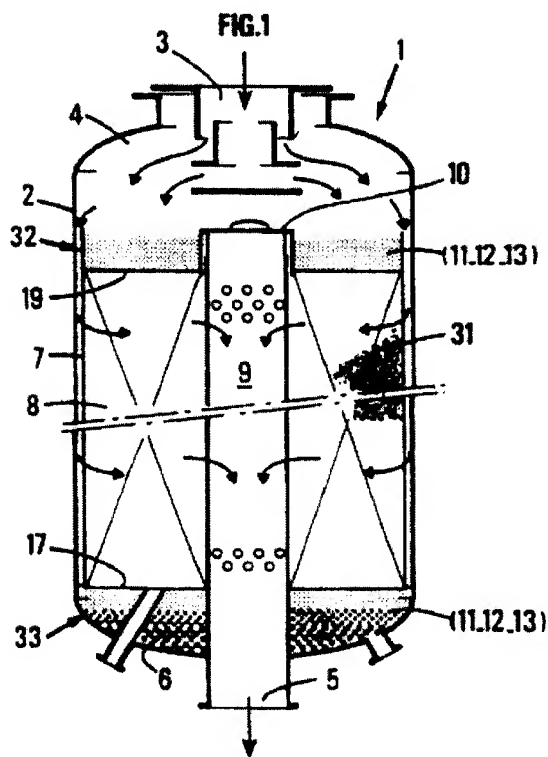
the perspective of one having ordinary skill in the art.

Applicants respectfully submit that based on such an analysis, Poussin teaches there are two specific portions of the cylindrical central stack 9 that do not contain any perforations: the bottom portion extending to the effluent outlet 5 and the portion of the central cylindrical stack 9 covered by the metal cap 10.

With regard to the effluent outlet 5, one of ordinary skill in the art would understand that no

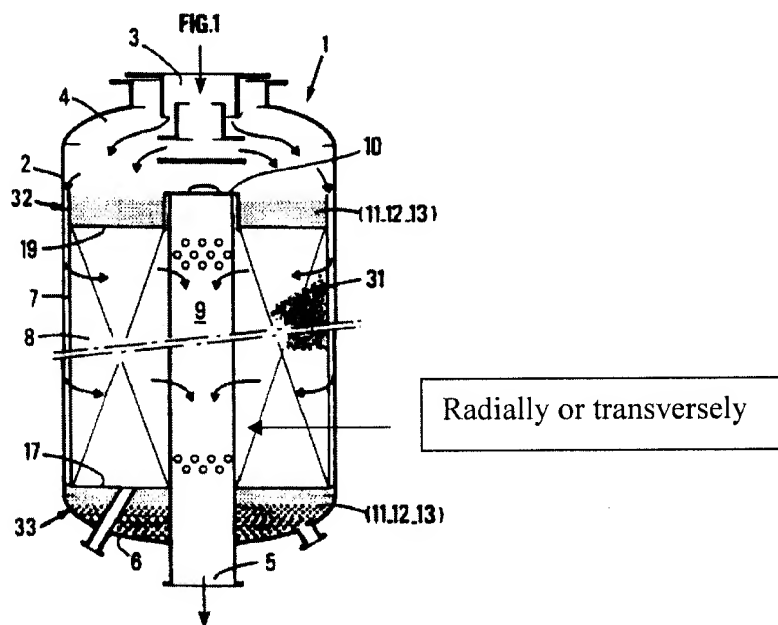
perforations would extend below the annular catalytic compartment 8, or alternatively, at the portion surrounding the cylindrical central stack 9 on the external portion of the radial cylindrical reactor 1. Poussin expressly discloses that the cylindrical central stack 9 is evacuated by the

¹ Webster’s Third International Dictionary (unabridged), Merriam-Webster Inc. (1993), p. 945.



outlet 5; not by perforations on the cylindrical central stack. (col. 7, lines 17-18). Accordingly, this portion of Poussin supports that the meaning of the term “generally” within the phrase “which is generally a perforated tube,” does not mean the whole of the cylindrical central stack 9 is perforated.

Second, with regard to the portion of the cylindrical central stack 9 covered by the metal cap 10, Applicants submit that the whole of the reference, as would be understood by one having



the capability of understanding the scientific and engineering principles applicable to the pertinent art, teaches that no perforations would exist on this upper portion. As the central purpose of the reactor is directed to controlling the reaction of a gas, one of ordinary skill in the art would read Poussin with a focus on the movement and reaction of the gas within the reactor, not on the incomplete sketches and conjecture relied upon by the Examiner.

To this end, Poussin expressly discloses “[t]he gaseous flow must pass round the covering as soon as it enters the reactor in order to laterally come into contact with the catalyst bed, said flow circulating radially or transversely from the top to bottom toward the outlet.” (col. 7, lines 55-60; *see* annotations on FIG. 1 reproduce above). Consequently, this specific disclosure directed to the primary purpose and function of the radial cylindrical reactor, i.e., the passing of the gas through the annular catalytic compartment 8, teaches away from the Examiner’s hypothesis that the upper portion of the cylindrical central stack 9 would have perforation.

More specifically, if the upper portion (portion covered by the metal cap 10) was perforated, this would in turn cause gas to flow upward at the top region of the annular catalytic compartment. Thus, the gas would not flow radially or transversely as disclosed by Poussin, but to the contrary, would have an axial component. As for the presence of an axial gas flow, Poussin expressly discloses that the invention disclosed therein proposes a new compartment covering having a filter, which in particular, avoids the passage of gas along an overall axial path and aids the passage through the filler thickness in a substantially radial manner. (col. 2, lines 23-27).

Therefore, the portions of Poussin directed to the flow of the gas teach of using a radial flow path and against using an axial flow path.

Now, turning to the Examiner’s support that the upper portion of the cylindrical central stack 9 is perforated, Applicants respectfully submit that no direct evidence is provided. First, the Examiner provides that the figures of Poussin are schematic and do not demonstrate the sole

locations of perforations in the tube. (*Examiner's Answer*, p. 4). For support, the Examiner notes that FIGS. 2 and 8 exhibit additional perforations not illustrated in FIG. 1. (*Id.*). However, Applicants note that these two figures disclose perforations only within portions of the cylindrical central stack 9 that reside within the annular catalytic compartment 8. (*See* FIGS. 2 and 8). Also, additional perforations illustrated in FIGS. 4-7, are within portions of the stack 9 that reside within compartment 8. Armed with this weak inference, the Examiner chooses to ignore the express disclosure related to the flow of the gas through the catalyst to conclude Poussin teaches perforations in the cylindrical central stack 9 at the portions covered by the metal cap 10. This weak inference, however, would not even exist if Poussin clearly demarcated more perforations along the length of the cylindrical central stack 9 that reside within the annular catalytic compartment 8, albeit FIG. 1 shows gas flow entering the stack at these portions.

In contrast to this reading of Poussin, Applicants submit that the proper interpretation of FIG. 1, which is also supported by the radial gas flow disclosure, is that the perforations illustrated in FIG. 1 were intended to show the uppermost and lowermost perforations on the cylindrical central stack 9. (the gas flow arrows indicating where other perforations may exist).

In conclusion, Applicants respectfully submit that because the whole of the reference as would be understood by one having ordinary skill in the art fails to disclose any perforations in the cylindrical central stack 9 at portions corresponding to the metal cap, that the rejection of claim 1 over Poussin is in error and should be withdrawn. Because claim 6 recites features similar to those argued above with regard to claim 1, Applicants submit that claim 6 is allowable for the same reasons set forth above with regard to claim 1.

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CONCLUSION

For the above reasons as well as the reasons set forth in Appeal Brief, Appellant respectfully requests that the Board reverse the Examiner's rejections of all claims on Appeal. An early and favorable decision on the merits of this Appeal is respectfully requested.

Respectfully submitted,



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